

## DETECTION OF FORWARDING PROBLEMS FOR EXTERNAL PREFIXES

### ABSTRACT

Methods and apparatus for enabling a provider to perform a tracing procedure to  
5 determine the existence forwarding problems within its network are disclosed.  
According to one aspect of the present invention, a method for detecting a forwarding  
problem within an autonomous system includes initiating a message from a source node.  
The message is sent to a message destination that is an external address relative to the  
autonomous system. The method also includes forwarding the message from the source  
10 node along a path to the external address which includes an intermediate node and a  
destination node. The message is received on the destination node through a first path  
segment of the path. Finally, the message is removed from the path at the destination  
node, and a response that indicates that the intermediate node does not have a forwarding  
problem is sent along the first path segment to the source node.